YAMAHA

SPEEDSTAR
YAMAHA COMPETITION PRODUCTS

ROAD STAR
XV1600
STAGE II
COMPETITION KIT
SPD-4WM09-00-02
INSTALLATION MANUAL

INSTALLER:
PLEASE READ AND UNDERSTAND THESE INSTRUCTIONS COMPLETELY BEFORE INSTALLATION TO AVOID POSSIBLE INJURY TO YOURSELF, OR DAMAGE TO THE PERFORMANCE KIT COMPONENTS OR MOTORCYCLE.

DEALER:
THIS MANUAL CONTAINS IMPORTANT INFORMATION FOR FUTURE REFERENCE AND *MUST* BE GIVEN TO THE CUSTOMER.

FEBRUARY 2002 **PAK-42M09-00-02**

Road Star
Speedstar Competition Kit – *Stage II*
Installation Manual

© 2002 by Yamaha Motor Corporation, U.S.A.
February 2002
Revised 5/02

All rights reserved. Any reprinting
or unauthorized use
without the written permission of
Yamaha Motor Corporation, U.S.A.
is expressly prohibited

Printed in U.S.A.

INTRODUCTION

Congratulations on your purchase of this genuine Yamaha Speedstar™ Competition product. Speedstar components have been precision-made to Yamaha's exacting standards so they fit right and give you a level of power and performance previously unavailable.

To enjoy your Speedstar products to the fullest, be aware of any laws that might affect your use of these modifications as well as all requirements of the sanctioning organization for competition use. Also remember that modified motorcycles may need a higher level of maintenance to perform to the fullest.

This Installation Manual does not contain all the information necessary to install the kit components.
These instructions were designed to be used along with the Yamaha XV1600 Service Manual (part number LIT-11616-12-56) available from your Yamaha dealer.

CAUTION:

- **Speedstar engine-related competition parts are intended for closed-course racing applications only.**
- **An alteration of emission-related components constitutes tampering under Federal and State laws and can lead to substantial fines and penalties if used other than in closed-course competition.**
- **Installation of this PERFORMANCE KIT requires extensive mechanical and tuning knowledge of 4-stroke motorcycle engines. A professionally trained motorcycle mechanic should install this kit and do any necessary tuning.**
- **For increased air intake, this competition kit uses an exposed air cleaner element. Do not operate the modified motorcycle in wet conditions. Carefully cover the air filter element with a plastic bag before washing the motorcycle. Driveability will be impaired if the air cleaner becomes wet.**
- **The components in this kit were designed to be used together as a complete system. Use of some components without others may cause running problems and may reduce performance.**

WARRANTY INFORMATION

Genuine Yamaha Speedstar components are covered by a 90-day warranty against defects in material or workmanship. Labor for replacement of defective components is not covered.

The Yamaha Limited Warranty provided with new Yamaha Star motorcycles has exclusions for certain failures, including those caused by competition or racing use as well as by abnormal strain or abuse. While installation of these Speedstar Competition components will not "void" your motorcycle's warranty, specific failures adjudged by Yamaha to have resulted from the installation of kit components, modifications, or from competition use may not be covered by warranty or extended service coverage.

KIT CONTENTS

COMPONENTS	REPLACEMENT PART NUMBER	PAGE
PERFORMANCE IGNITION MODULE	SPD-4WM09-50-00	3
PERFORMANCE JET KIT	SPD-4WM09-49-00	3
PERFORMANCE AIR CLEANER & BREATHER SET	SPD-4WM09-47-05	5
LONG DRAG PERFORMANCE EXHAUST	SPD-4WM09-90-02	8

NOTE:
To avoid doing unnecessary duplicate work, study the kit contents and installation procedures thoroughly and install the components in a logical order. Yamaha suggests installing the components in the order that they appear in this manual.

PERFORMANCE IGNITION MODULE
SPD-4WM09-50-00

This PERFORMANCE IGNITION MODULE is a direct replacement for the stock ignition module.

CONTENTS

Item	Part Name	Qty
1.	PERFORMANCE IGNITION MODULE	1

INSTALLATION

Refer to the Road Star Service Manual and replace the stock ignition module with the PERFORMANCE IGNITION MODULE.

PERFORMANCE JET KIT
SPD-4WM09-49-00

The Jets in this PERFORMANCE JET KIT are a direct replacement for the stock jets in the carburetor.

CONTENTS

Item	Part Name	Qty
1	JET NEEDLE	1
2	WASHER, NEEDLE JET	2
3	SPACER, RING (PLASTIC)	1
4	C-CLIP, NEEDLE JET	1
5	PILOT JET - 50	1
6	MAIN JET - 150	1
7	MAIN JET - 160	1
8	MAIN JET - 165	1
9	MAIN JET - 170	1

INSTALLATION

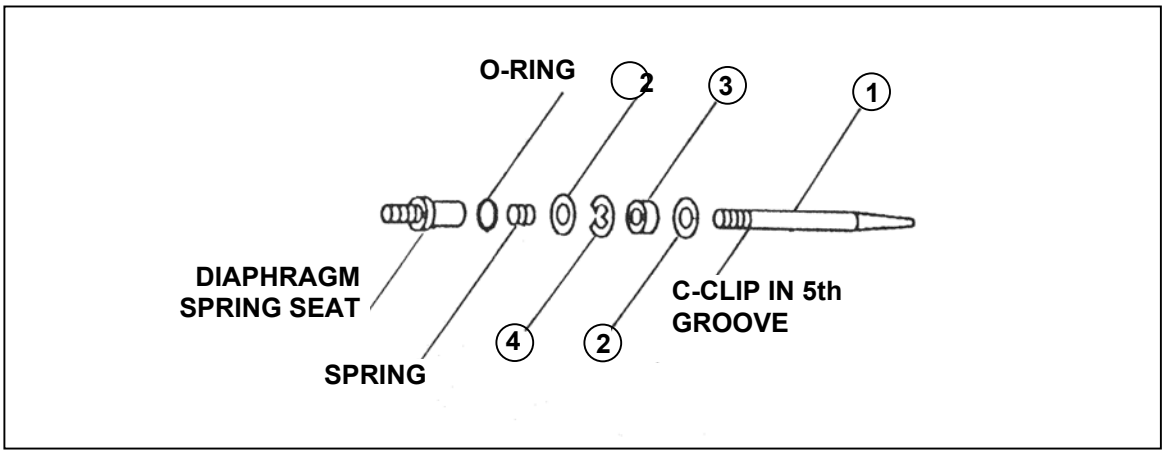
Refer to the Road Star Service Manual and the following instructions.

1. Remove the carburetor.
2. Remove the vacuum chamber cover and remove the piston valve (slide).

CAUTION:

Be careful not to damage the diaphragm.

3. Remove the jet needle and replace it with the Jet Needle ① from the kit. Use the original plastic ring spacer, washers, C-clip (in the 5th groove down from the top), spring, O-ring, and diaphragm spring seat.



CAUTION:

Do not put the clip in the 6th position on the Jet Needle to avoid damaging the jet needle holder in the slide.

NOTE:
The Jet Needle Washers ②, plastic Ring Spacer ③ and the Jet Needle C-Clip ④ are extra. Keep them in case you lose or damage the original pieces.

4. Double-check that the Jet Needle is assembled correctly and reinstall it in the Piston Valve.
5. Replace the original Pilot Jet in the Carburetor with the Pilot Jet-50 ⑤.
6. Remove the Float Bowl, being careful not to damage the Float Bowl Gasket. Replace the original Main Jet to work with the Long Drag Exhaust Pipes as follows:

Primary Operation Elevation	Main Jet (starting point)
Below 2000 ft. (below 607m)	Main Jet -165 ⑧
2000 ft. (607m) or above	Main Jet -160 ⑦

7. Locate the pilot air screw plug in the bottom of the carburetor. Using a 5/32-inch (4mm) drill bit with a drill stop at 5/32 inch, carefully drill through the plug. Screw a sheet-metal screw into the hole in the plug, and then pull on the screw with pliers to remove the plug.

CAUTION:

Be careful not to drill to deeply. Otherwise the pilot air screw or carburetor can be damaged.

8. Carefully turn the pilot air screw in (clockwise) until it is lightly seated, then turn it out (counterclockwise) 3 to 3-1/2 turns.
9. Reinstall the carburetor.

⚠WARNING

After reinstalling the carburetor, check for proper throttle operation, being certain that the throttle works smoothly as the handlebars are moved from steering stop to steering stop.

PERFORMANCE AIR CLEANER & BREATHER SET
SPD-4WM09-47-05

This PERFORMANCE AIR CLEANER & BREATHER SET is a direct replacement for the stock air filter assembly.

CONTENTS

Item	Part Name	Qty
1	AIR CLEANER COVER	1
2	SPACER	1
3	DRAIN CAP	1
4	INLET PLUG	1
5	INLET PLUG CLAMP	1
6	K&N FILTER ELEMENT	1
7	HEX SOCKET HEAD SCREW (M6 x 1.0p x 70mm Lg)	1

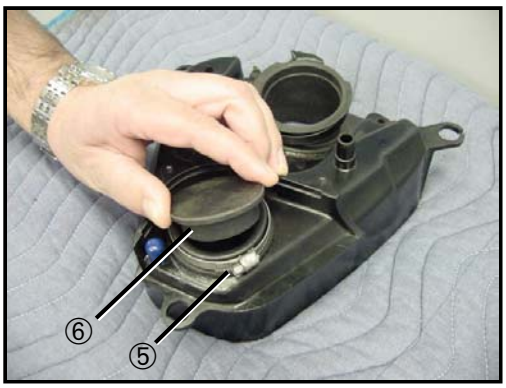
INSTALLATION

Refer to the Road Star Service Manual and the following instructions.

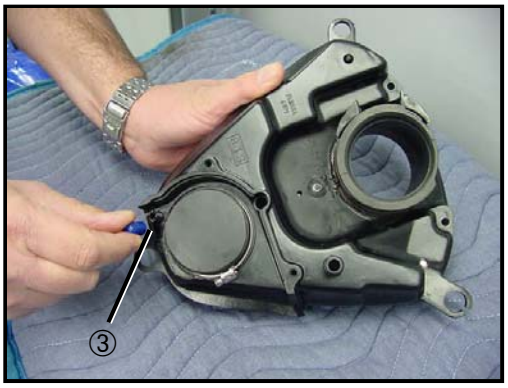
1. Remove the air filter case.
2. Remove the two Phillips screws from the back of the air filter case. Remove the center screw from the front and remove the outer cover.
3. Remove the screws holding the filter. Remove the filter and breather hose.
4. Reinstall the two filter screws in the threaded filter mounting holes and tighten them securely.

5. Install the Inlet Plug Clamp ⑤ on the air intake.

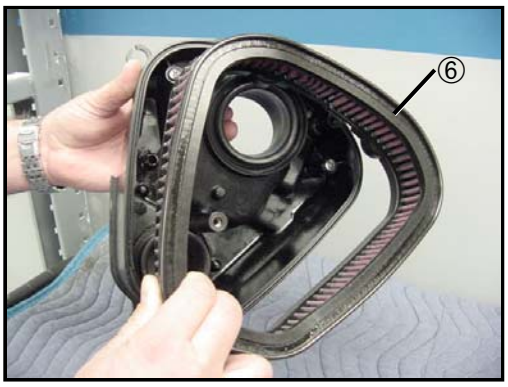
6. Push the Inlet Plug ④ into the Air Intake and tighten the Inlet Plug Clamp ⑤.



7. Push the Drain Cap ③ onto the Drain nipple next to the Air Intake.



8. Install the K & N Filter Element ⑥ on the air filter case back. Be sure the air filter case back is fully seated in the groove of the filter.



9. Install the Air Cleaner Cover ① over the K & N Filter Element with the Spacer ② between the Air Cleaner Cover and the Air Filter Case Back. Insert the Hex Socket Head Screw ⑦ through the Air Cleaner Cover and Spacer, and tighten it securely.

10. Reinstall the Air Filter Case, being sure to reconnect the breather hoses to the nipples on the air filter case back.

AIR FILTER MAINTENANCE

CAUTION:

- **The air filter is an oiled-element type which comes pre-oiled from the factory. After cleaning, the filter element must be re-oiled with K&N Air Filter Oil.**
- **Use only K&N Air Filter Oil. If the filter is used without oil or with the wrong kind of oil, it cannot offer the filtration it was designed to provide and severe engine damage can occur. Never use other oils, including foam air filter oil, motor oil, transmission fluid, diesel fuel, or WD-40.**
- **Do not use compressed air to clean the filter – it will blow holes in the element fabric.**
- **Use K&N Air Filter Cleaner to clean the filter element. Do not use gasoline, solvents, cleaning solutions, steam, or high-pressure water which can damage the filter material and the rubber end caps.**
- **After cleaning, allow the filter element to air dry. Do not use compressed air, heat, hair dryers, or open flame to try to speed up the drying process.**

The high-performance air cleaner element is designed by the manufacturer to have a service interval of up to 50,000 miles or more before cleaning is required. This maintenance interval will be reduced if operating in dusty or wet conditions. When the filter looks too dirty, use the following procedure:

Pre-Cleaning

1. Remove the filter element. Tap the element to dislodge dirt, then gently use a soft-bristle brush to remove surface dirt.
2. If a thorough cleaning is not practicable, re-oil the element with K&N Air Filter Oil (available from your dealer or other K&N retailer) following package instructions. Otherwise, continue with Cleaning.

Cleaning

3. Spray K&N Air Filter Cleaner (available from your dealer or other K&N retailer) liberally onto the entire element. Let it soak for 10 minutes.
4. Rinse the element thoroughly with clean, low-pressure water. Rinse from the inside out so the dirt is removed and not driven further into the filter.
5. Shake off the filter element to remove excess water, then let the filter element air-dry naturally.
6. Re-oil the filter with K&N Air Filter Oil. Let the oil soak into the filter, waiting for it to saturate the cotton material (about 10 minutes for spray oil or 20 minutes for bottled oil). Re-oil any dry spots still showing.
7. Reinstall the air filter element on the motorcycle.

LONG DRAG PERFORMANCE EXHAUST
SPD-4WM09-90-02

CONTENTS

Item	Part Name	Qty
1	EXHAUST PIPE, FRONT CYLINDER	1
2	EXHAUST PIPE, REAR CYLINDER	1
3	SILENCER, FRONT CYLINDER*	1
4	SILENCER, REAR CYLINDER*	1
5	HEAT SHIELD, FRONT EXHAUST*	1
6	HEAT SHIELD, REAR EXHAUST*	1
7	CLAMP, EXHAUST PIPE CLAMP	2
8	BRACKET, EXHAUST SUPPORT	1
9	NUT, SPECIAL FEMALE HEX (M8 x 1.25p)	4
10	BOLT, HEX SOCKET HEAD (M10 x 1.25p x 25mm Lg)	2
11	NUT, HEX FLANGE HEAD (M10 x 1.25p)	2
12	WASHER, PLAIN (M10)	2

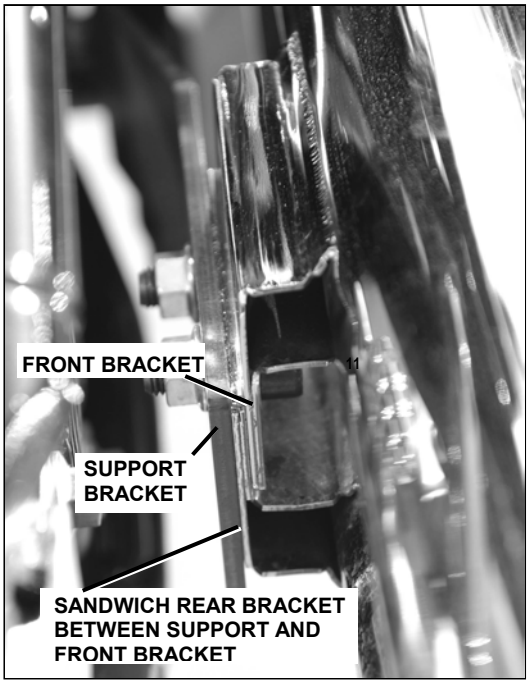
* Pre-assembled with the Exhaust Pipes ① and ②.

NOTE:
New exhaust gaskets, 3EG-14613-00-00 (qty. 2), are recommended, but not included with the exhaust pipe components.

INSTALLATION

1. Refer to the Road Star Service Manual as you remove the stock exhaust system and the muffler support bracket.
2. Install the Exhaust Support Bracket ⑧ on the frame using the stock M10 hex socket head bolts. Tighten to 22 ft-lb (3.0 m-kg).
3. Insert exhaust gaskets in the cylinder heads. New gaskets are not included in the kit (order part number 3EG-14613-00-00).
4. Install the Rear Cylinder Exhaust Pipe ② using two Special Female Hex Nuts ⑨ at the Cylinder Head. Cylinder Head. Finger-tighten the nuts.
5. Install the Front Cylinder Exhaust Pipe ① using two Special Female Hex Nuts ⑨ at the Cylinder Head. Finger-tighten the nuts.

NOTE:
Sandwich the Rear Cylinder Exhaust Pipe Bracket between the Front Cylinder Exhaust Pipe Bracket and the Exhaust Support Bracket as shown.



6. Install the Hex Socket Head Bolts ⑩, Plain Washers ⑫, and Hex Flange Nuts ⑪ at the Exhaust Support Bracket. Finger-tighten the nuts.
7. Tighten the Special Female Hex Nuts ⑨ at the cylinder heads to 11 ft-lb (1.5 m-kg). Tighten the M8 Hex Socket Head Bolts and Flange Nuts at the Exhaust Support Bracket to 22 ft-lb (3.0 m-kg).
8. Attach the stock Rear Brake Hose “anchor” to the new Exhaust Support Bracket using the original Hex Flange Bolt and tighten to 5.1 ft-lb (0.7 m-kg).